Executive Summary

GIS in Maryland is at a crossroads. The rapid changes in all facets of information technology challenge state and local government to respond with innovative solutions in spite of limited resources. Citizens today have a high degree of technological capability and now, more than ever before, are <u>demanding </u>that government processes become open, accessible and interactive at their convenience. The challenge of putting data and technology "out there" for this new array of users will demand that government focus on issues of data quality and system interoperability that were not previously a consideration.

The following strategic plan was developed by the Maryland State Government Geographic Information Coordinating Committee (MSGIC) as a framework for the future. Failure to implement the entire suite of suggestions will not doom Maryland to the bottom tier of states, but it will do serious harm to the state's ability to foster business development and economic growth, plan and implement Smart Growth, and meet the needs of its citizens.

Today government is faced with an almost limitless set of responsibilities. Health care, mass transportation, education, natural resource protection, growth management, public safety, recreation and disaster preparedness all vie for attention, compete for funding, and make demands on state and local resources.

Successfully meeting these responsibilities takes time, money and information. Lots of information!   The kind of information that helps leaders better understand the relationships between social, economic, environmental and demographic factors.   The kind of information that will help multi-disciplinary professionals meet multi-disciplinary challenges and collectively apply their knowledge to solve difficult program and policy issues. The kind of information that GIS can provide.

There is a new mantra for the 21st century:

"You can't have e-government without g-government."

In other words, the foundation of the new electronic society, the connected world, is GIS. It is as much a part of the state's infrastructure as computer networks, buildings, water treatment facilities, sewage treatment plants and managed properties. It is utilized by federal, state and local government agencies, businesses and private citizens. Many experts claim that over 80% of government data have a geographic component and can be used in a spatial context. It is imperative then that all the levels of government and agencies engaged in automated mapping, geographic data collection and development of GIS have an implementable, fundable strategy that will take them into the next century, keeping pace with the demands of elected officials and citizens. The following document presents just such a strategy.

In September 2000, MSGIC conducted a two-day Strategic Planning Workshop with participation by seventy-four representatives from thirty State agencies, eleven local agencies, and ten others from federal agencies and the private sector. For many, this Workshop was their first exposure to MSGIC and they learned about the benefits of GIS and spatial data to their programs and missions. More importantly, these individuals provided valuable insights and contributions to the workshop process, identified new challenges and offered new solutions.

The New Challenges:

1) The first challenge is the new demand for spatial data analysis among agencies that are not familiar with GIS Technology. The development of a web-based portal into the State's data and processes elevates the expectation that spatial data will be available on the Internet in easily usable applications that parallel the federal Digital Earth Program. These initiatives inherently assume that data and technologies will be utilized not only by agency staff, but citizens as well.

2) Next, we are challenged to make these complex systems and data sets both available, and easy to use by an even wider variety of users. With the explosion of Internet usage, coupled with Maryland's commitment to *e*-government solutions and data availability, the demand for graphic representation of data will surely increase.

3) The third challenge we face is to find appropriate classifications, within the Personnel Division of the Department of Budget and Management to implement a new job series to retain existing employees and attract Maryland's best students to the workforce. GIS technicians and managers are a highly specialized sector of the information technology field with many of the same skills used by incumbents in "classic" data processing positions. In addition, they have to be well versed in cartography and are generally specialists in another discipline such as biology, transportation planning or agricultural production. We do not have appropriate classifications for these employees.

The New Solutions:

1) Broaden MSGIC's initiatives and membership to become an inclusive statewide organization. The voluntary nature of the current organization can't provide the cohesiveness and the energy required for responding to the significant array of tasks and issues that were defined in the workshop. Dedicated staff are needed to coordinate and support these new initiatives which must be openly embraced, recognized and directly supported by the IT organizational hierarchy within Maryland state and local government.

2) MSGIC must move from its current situation, where various staff assume responsibilities for specific activities, to become a more formal body for program and project support. This is not to suggest that no voluntary support will be necessary. It *does* mean that future activities will require a support structure different from the

current one. It also means that we must distinguish between data production and data use to become truly efficient.

3) MSGIC will give thorough consideration to the range of organizational alternatives that might effectively move GIS into the mainstream of Maryland information technology so that it will be the vehicle from which a new organization emerges. An Organizational Structure Subcommittee is recommended to focus on structure, staffing, support and funding actions from both a short term and a long-term perspective.

4) MSGIC will consider establishing some level of secured funding to support its work and activities. The degree to which MSGIC centralizes responsibility for various projects, initiatives and activities will determine its overall budget requirement. The Organizational Structure Subcommittee will determine the budgetary requirements and likely revenue sources to meet these needs.

5) The mission and responsibilities of the MSGIC subcommittees will be adjusted to meet ongoing and specific project needs. MSGIC will also explore the use of specific project-based working groups that have a limited focus and life cycle, to make recommendations to the standing subcommittees and decision-making body.

6) Maryland government must define GIS data development and stewardship as a capital asset. In this way, data projects can be more appropriately funded as a capital expenditure instead of as an operational expense. Agencies should also be able to fund ongoing data maintenance in this way.

7) MSGIC will serve as a coordinating body to ensure that affordable training becomes available for all of the different types of users. As GIS technology becomes more broadly available to a wider array of users, there will be a much higher demand for training. The need for a better understanding of GIS technology and the issues related to it will be the driving forces in its effective implementation. Responding to the educational demands of a broad clientele will be one of our primary challenges.

Expanding the Agenda

In addition to identifying new challenges and the solutions to meet them, the MSGIC workshop developed an expanded agenda to be considered, including;

1) Increasing cooperation between state and local partners through creation of "framework" data at mutually acceptable scales, and how to fund these efforts in a sound and equitable manner.

2) Emphasis on developing good premise addresses, and address ranges on the road centerline network.

3) Developing a routine data maintenance model where sustained maintenance is appropriately supported and funded.

4) Requiring that published standards be followed and coupled with a renewed effort to define standards for the base layers.

5) Implementing a "Clearinghouse", where data can be centrally accessed over the Web to make GIS a more functional tool for a broader array of users.

New Programs

Throughout the Strategic Planning Workshop, common themes and interests for program coordination were raised. The issues of data sharing, and integrating GIS into government business functions, naturally led to discussions of how GIS could contribute to ongoing statewide programs. The new initiatives listed below will provide opportunities for multi-agency and cross-jurisdictional programs, identification of data sharing opportunities, and practical demonstrations of the application of GIS and spatial analyses to improve business practices and client services. The major programs identified are:

- Mapping Indicators of Child Well-being

- Enhancing Maryland's Smart Growth Program

- Supporting the eMaryland Initiative

The role of MSGIC as a promoter, coordinator, facilitator, advisor (both technical and policy) and partner fits well in its overall mission and objectives. It also provides opportunities for members to work across department, agency and jurisdictional boundaries. MSGIC has already positioned itself to coordinate data compilation and applications development to support several identified program efforts and initiatives.

Evaluating MSGIC's Role

In guiding the coordinated development of GIS activities in Maryland, it is important to characterize the current organizational and technical environments. Such characterization provides a focus on both strengths and limitations for MSGIC's planning.

Strengths

Both MSGIC and MLOGIC have the following factors in their favor for the effective coordination and development of GIS technology throughout the State. MSGIC should focus on these strengths and use them as a foundation to efficiently implement its plans and activities.

1) Existence of trained and experienced staff

2) Experience with multiple computer platforms, software and data formats

3) A structured approach for information exchange and related data issues

4) Digital base maps

5) Mid-level management support for MSGIC and State GIS initiatives

Limitations

MSGIC's limitations reflect specific technological or institutional factors and conditions that may inhibit the efficient implementation of MSGIC's mission. MSGIC should eliminate these limitations or reduce their impact to more efficiently implement its plans and activities.

1) Obstacles to proper staffing and classification

2) The enormous diversity of non-prioritized GIS applications

3) Non-Participation by key agencies can have a severe impact on MSGIC's mission

4) A suitable structure for assignment of specific responsibilities and procedures for GIS development activities

5) Individual participation sometimes varies with current workload and level of interest.

Critical Success Factors

MSGIC must achieve its newly defined objectives and fulfill the activities reflected in this Strategic Plan. Actions must be taken in several critical areas. The completion of these actions may be evaluated in terms of Critical Success Factors, and all planning, design and implementation activities should be accomplished with these critical success factors in mind.

1) Are new challenges and opportunities approached proactively?

2) Is GIS integrated with the "main stream" IT technologies?

3) Are standards fully implemented?

4) Is there a broader user base?

5) Is GIS integrated into agency business practices?

6) Is GIS considered on the front end of projects and proposed legislation?

7) Is GIS improving customer service?

8) Does the public find the data provided by GIS systems and agencies to be credible?

9) Is there a raised level of awareness, appreciation, and demand for GIS within and among management levels of government?

10) Has the use of GIS increased as a fundamental part of people's jobs?